Multifocal Post-Traumatic Scintigraphic Changes Mimicking Bone Metastases in a Battered Adult.

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Abstract
Severa lpathologies have been reported to cause scintigraphic patterns similar to multiple bony metastases. Heterotopic bone formation is known to mimic several inflammatory and neoplastic conditions including recurrent tumors. However, no reports on multifocal heterotopic bone formation simulating the typical pattern of randomly distributed foci of increased uptake of metastases on bone scan were found in literature. We present a case of a young adult who was repeatedly assaulted by others over a period of one month and on bone scan had a pattern similar to bony metastasis due to multiple foci of heterotopic bone formation and fractures.

Key words
Bone scan, heterotopic bone formation, bone metastases.

Case report
A 28-year-old male was referred to nuclear medicine for bone scan because of bony pain and suspected multiple fractures. The patient had multiple abrasions all over his body, and areas of swelling in the hands, arms and shoulders. The patient had no past medical history and was not on any medications before. Multiphase bone scan was obtained after intravenous injection of 925 MBq (25 mCi) of Tc-99m methylene diphosphonate. Whole-body blood pool images were obtained in the anterior and posterior projections for 5 minutes using dual-headed gamma camera. Whole body delayed images were obtained 3 hours post injection using a matrix of 1024x256. Early blood pool static images (Figure 1) show multiple foci of increased blood pool activity in both upper limbs, bilaterally in the region of scapulae, lower left chest posteriorly and medial aspect of left mid-thigh. The most intense activity is noted in the left distal arm. Delayed images (Figure 2) show multiple areas of increased activity in the region of left distal ulna, right distal ulna, right humeral shaft, bilateral ribs, left scapula. Intense tracer uptake is noted in the left elbow extending to distal humeral region.

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humerus. Certain foci, such as those of the arms, appear clearly to extend beyond bone boundaries to the adjacent soft tissue and correspond to the increased blood pool activity. The pattern on bone scan represents multiple foci of immature heterotopic bone formation and rib fractures as confirmed by radiographs.

Discussion

This pattern simulates the classic appearance of multiple bony metastases. Additionally, certain foci as that in the left humerus could mimic the appearance of a primary bone tumor. Early heterotopic bone formation can mimic clinically several disease processes such as osteomyelitis, soft tissue abscess and tumors. The condition has not been known to be confused with typical metastatic pattern on bone scan (1-7).

Conclusion

This case is unique since it shows a scintigraphic pattern due to multifocal heterotopic bone formation and fractures that could be confused with primary and secondary neoplastic bone disease.

References